

L 13628..66

ACC NR: AP6003316

protection methods for metals using sodium nitrite and dicyclohexylammonium nitrite, and such corrosion inhibitors for both ferrous and nonferrous metals as salts of nitro- and dinitrobenzoic acids and certain amines.
I. L. Rozenfel'd is associated with the Institute of Physical Chemistry, Academy of Sciences USSR. Orig. art. has: 10 tables. [ATD PRESS: 4169-P]

SUB CODE: 11 / SUBM DATE: 05May65 / ORIG REF: 039 / OTH REF: 050

Card 2/2

I. 28529-66 EWP(j)/EWT(m)/EWP(t)/ETI IJP(c) RM/JD/WB/GD
ACC NR: AT6013803 (A) SOURCE CODE: UR/0000/65/000/000/0284/0295

AUTHOR: Rozenfel'd, I. L.; Persiantseva, V. P.; Rezzin, B. L.; Shustova, Z. F.;
Gavrich, N. M.

ORG: none

TITLE: Investigation of certain nitrobenzoic amine salts as corrosion inhibitors for
ferrous and nonferrous metals

SOURCE: Korroziya metallov i splavov (Corrosion of metals and alloys), no. 2.
Moscow, Izd-vo Metallurgiya, 1965, 284-295

TOPIC TAGS: amine salt, corrosion inhibitor, ferrous metal, nonferrous metal

ABSTRACT: The article presents the results of an investigation of the protective properties of certain inhibitors (nitro- and dinitrobenzoates) synthesized at the authors' laboratory; these properties were tested in natural as well as accelerated conditions involving cyclic and continuous exposure to moisture, with the aid of a specially developed device (Persiantseva, V. P., Rozenfel'd, I. L. Zavodskaya laboratoriya, 1958, 24, 7, 282). (The tests under natural conditions simulated the conditions under which metal products are stored in unheated warehouses and lasted for 21 months.) The inhibitors investigated were: hexamethyleneimine meta-nitrobenzoate, hexamethyleneimine ortho-nitrobenzoate, hexamethyleneimine 3,5-dinitrobenzoate, and piperidine 3,5-dinitrobenzoate. The coating of metal surface with

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L 28529-56

ACC NR: AT6013803

an inhibitor was accomplished through adsorption from vapor phase or by washing the specimens in alcohol solutions of the inhibitors with subsequent drying at room temperature. Protective properties were determined according to the time elapsed until the appearance of first signs of corrosion and according to corrosion rate (as determined by gravimetric method). Findings: When applied in the form of alcohol solutions, all the four tested chemicals proved to be effective inhibitors of atmospherit corrosion under conditions simulating storage of metals in unheated warehouses, in industrial districts (where the atmosphere is more contaminated), for not only ferrous metals but also the most widely used nonferrous metals, (Cu and its alloys, Ag, Sn, Al and its alloys, Ni and Cr coatings, and Zn and Cd coatings passivated in a $K_2Cr_2O_7$ solution). These findings should represent a major advance considering that previously the only other known volatile inhibitors used in industry protected only ferrous metals. Orig. art. has: 7 tables and 1 figure.

SUB-CODE: 11, 07 / SUBM DATE: 19Jul65 / ORIG REF: 004 / OTH REF: 002

Card 2/2

L 28537-66 EWP(j)/ENT(m)/T/EWP(t)/ETI IJP(c) RM/RW/JD/NB/GD

ACC NR: AT6013804

SOURCE CODE: UR/0000/65/000/000/0296/0304

AUTHOR: Kozenfel'd, I. L.; Persiantseva, V. P.; Gulyayeva, I. P.

57

ORG: none

TITLE: Protective properties of inorganic inhibitors in the presence of extraneous ions

SOURCE: Korroziya metallov i splavov (Corrosion of metals and alloys), no. 2.
Moscow, Izd-vo Metallurgiya, 1965, 296-304

TOPIC TAGS: corrosion inhibitor, ion, sodium compound, sulfate, chloride, electrolyte

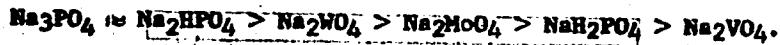
ABSTRACT: Inorganic inhibitors, which chiefly include sodium and potassium salts of acids whose anions contain atoms of elements V, IV and VII of the periodic table, are widely used to protect metals against corrosion in neutral media. Yet despite the numerous studies of these inhibitors, the interaction between inhibiting and aggressive media still has not been adequately investigated and hence the effectiveness of the inhibitors in various electrolytes cannot be predicted. To fill this gap, the authors investigated the corrosion rate of Fe as a function of inhibitor concentration for a fixed concentration of aggressive ions (Cl^- , SO_4^{2-}). In addition the protective concentrations of inhibitors for various concentrations of aggressive ions were investigated; this made it possible to derive a mathematical relation for

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1 28537-46

ACC NR: AT6013B04

calculating the required amount of inhibitor for real systems. Thus the dependence of the protective concentration of such compounds as Na_2WO_4 , Na_3PO_4 , Na_2MoO_4 , NaH_2PO_4 on the content of sulfate ions (SO_4^{2-}) in the solution is expressed by the equation: $Y = 0.17X + 0.003$, where Y is molal inhibitor concentration, and X is molal concentration of aggressive ion. For the aggressive ion Cl^- the corresponding relation is: $Y = 0.38X + 0.003$. The accompanying electrochemical tests pertained to electrode impedance which, as was anticipated, differed depending on whether the inhibitor forms phase layers or adsorption layers at the surface of the protected metal. The corrosion rate of metal as a function of inhibitor concentration in a solution of 30 mg/liter NaCl and 70 mg/liter Na_2SO_4 was found to decrease in all cases -- except monosubstituted phosphate and sodium vanadate -- with increasing inhibitor concentration (Fig. 1). Thus, the investigated inhibitors may be arranged in the following series of increasing protective capacity:



It is found that these inhibitors markedly alter impedance when the current applied is small, do not affect capacitance characteristics in the presence of high frequencies but somewhat reduce ohmic resistance at these frequencies. Such changes in impedance indicate that inhibitors of this type (XO_4^-) alter the polarization characteristics of the system. Orig. art. has: 9 figures.

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1 28537-66

ACC NR: AT6013804

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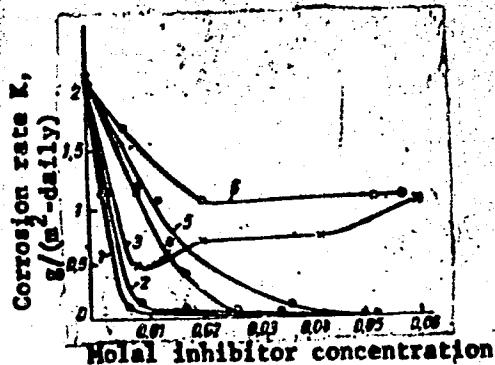


Fig. 1. Metal corrosion rate as a function of inhibitor concentration in solution containing 30 mg/liter NaCl and 70 mg/liter Na₂SO₄:

1 - trisodium phosphate; 2 - sodium tungstate; 3 - mono-substituted sodium phosphate; 4 - disubstituted sodium phosphate; 5 - sodium molybdate; 6 - sodium vanadate

SUB CODE: 111, 07 SUM DATE: 19Jul65/ ORIG REF: 005/ OTH REF: 006

Cord

3/3 C.C.

J 28536-66 EWP(1)/EWT(m)/T/EWP(t)/ETI IJP(c) RM/WW/JD/WB/GD
ACC NR: AT6013805

SOURCE CODE: UR/0000/65/000/000/0305/0314

AUTHOR: Bozhenfel'd, I. L.; Parsiantseva, V. P.

53

B+1

ORG: none

TITLE: Mechanism of the inhibition of metal corrosion by ammonia

SOURCE: Korroziya metallov i splavov (Corrosion of metals and alloys), no. 2.
Moscow, Izd-vo Metallurgiya, 1965, 305-314

TOPIC TAGS: corrosion inhibitor, ammonia, steel, surface ionization, hydrolysis

ABSTRACT: Recently, to improve the effectiveness of the corrosion protection of metals in storage and transport, ammonia salts and other compounds capable of releasing ammonia during hydrolysis and dissociation have begun to be added to the standard inhibitors (e.g. NaNO₃). It is generally assumed that the mechanism of protective effect may then manifest itself in one of the following phenomena: a) NH₃ displaces the pH of the medium to the region of low corrosive activity; b) NH₃ (or NH₄OH) binds the aggressive component of the medium (e.g. CO₂); c) the mixing of NH₃ salts with NaNO₃ leads to the formation of the highly volatile NH₄NO₃. Since these assumptions lacked experimental proof, the authors decided to investigate the protective capacity of NH₃ as a function of its content in the atmosphere, as well as to investigate the effect of NH₃ on the electrochemical behavior of steel. The in-

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ACC NR: AT6013805

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vestigation pertained to NH_3 of 100% relative humidity at 25°C , on varying its concentration by placing in the reaction vessel NH_4OH of various concentrations corresponding to ammonia vapor pressures of from 66.66 to 666.6 n/m^2 (0.5 to 5 mm Hg), with the corrosion being determined as a function of time until the appearance of first signs of corrosion on the steel specimens. These experiments showed that even insignificant concentrations of NH_3 in the atmosphere (266.64 n/m^2 or 2 mm Hg) can effectively protect steel against corrosion. An attendant investigation of the electrochemical behavior of steel in NH_3 atmosphere showed that the presence of NH_3 displaces the steel's potential by 500 mv in the positive direction. The mechanism of the protection of steel by NH_3 is due to the hydration of NH_3 and the concomitant formation of NH_3 ions. The prior adsorption of hydroxyl ions on the (positively charged) surface of steel makes possible the adsorption of NH_3 ions on the metal surface, which leads to a sharp change in the ionization rate of Fe. These findings are also highly significant to the determination of the mechanism of the protective effect of other amine-class compounds which, in solutions, form cations similar to the NH_3 ion. Orig. art. has: 7 figures and 4 formulas.

SUB CODE: 1111,10720/ SUBM DATE: 19Jul65/ ORIG REF: 005/ OTH REF: 003

Card 2/2 CC

ROZENFEL'D, I. L.; PERSIANTSEVA, V. P.

New principle of anticorrosive protection by inhibitors. Dokl.
AN SSSR 156 no. 1:162-165 My '64. (MIRA 17:5)

1. Institut fizicheskoy khimii AN SSSR. Predstavлено akademikom
A. N. Frumkinym.

ACCESSION NR: AP4035821

8/0020/64/156/001/0162/0165

AUTHOR: Rozenfel'd, I. L.; Persiantseva, V. P.

TITLE: On a new principle of anticorrosive protection by inhibitors

SOURCE: AN SSSR. Doklady*, v. 156, no. 1, 1964, 162-165

TOPIC TAGS: anticorrosive protection, corrosion inhibitor, anode reaction decrease, cathode reaction increase, stationary potential, iron stationary potential, hexamethyleneimine 3,5 dinitrobenzoate, organic cation adsorption, surface ion adsorption, passivation, dinitrobenzoic acid salts, dicyclohexylamine nitrite

ABSTRACT: This consists essentially in obtaining full passivation potential not by decreasing the reaction rate at the anode but by sharply increasing that at the cathode; it requires inhibitor reduction with sufficient speed in a neutral medium. Organic salts are capable of shifting the stationary potential of iron by 300-400 millivolts towards the positive side without significantly changing the rate of metal ionization at the anode; this applies in particular to carboxyl and secondary NO₂ groups attached to the benzene ring. The newly synthesized inhibitor hexamethyleneimine 3,5-dinitrobenzoate proved easily reducible and highly effective.

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ACCESSION NR: AP4035821

Another requirement for protection, besides electrochemical reduction, is the adsorption of organic cations by the metal surface. If this adsorption reaches a significant level the specific current will easily attain the critical value required for the passive iron state. This requirement is met by organic salts of dinitrobenzoic acid containing easily absorbed organic cations and reducing the nitrite group with sufficient speed. This new principle is applicable with electrolytes containing a low activator concentration (chlorine ions). The chemical reactions involved are presented and discussed for 2 inhibitors representing the 2 kinds of protection: dicyclohexylamine nitrite and the above-mentioned compound. The first shifts the stationary potential towards positive due to considerable checking of anode reaction; the second achieves the same by accelerating cathode depolarization. In dilute electrolytes this latter will also decelerate anode ionization reaction. A new addition to inhibitor classification is thus required, i.e. the class of compounds affording metal protection by accelerating the process at the cathode. Orig. art. has: 3 figures and 2 formulas.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry, Academy of Sciences, SSSR)

Card

2/3

ACCESSION NR: AP4035821

SUBMITTED: 24Apr63

ENCL: 00

SUB CODE: MM, OC

NO REF Sov: 002

OTHER: 000

Card 3/3

PERSIAN ISERA, U.R.

KUDINTAVLEV, N.T.; PERSIANTSEVA, V.P. and KALB, V.M.

"High-luster Copper Plating From Acid Electrolytes." Nauchno-tehnicheskoye obshchestvo mashinostroitel'noy promyshlennosti, Kiyevskoye oblastnoye pravleniye. Zashchitno-dekorativnyye i spetsial'nyye pokrytiya metallov (Protective, Decorative, and Special Coatings for Metals) Kiyev, Mashgiz, 1959. 291 pp. (pp 67)

188310

S/080/61/034/009/010/016
D204/D305

AUTHORS: Rozenfel'd, I.L., Persiantsyeva, V.P., Terent'yev, P.B.
and Polteva, M.N.

TITLE: Investigating the influence of chemical composition
and structure of organic compounds on their ability
to retard the corrosion process

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 9, 1961.
2047 - 2056

TEXT: This is report I from the series of papers on investigating
the mechanism of protection of metals against corrosion by volatile
inhibitors. The results of an investigation of the dependence
of protective properties of various classes of compounds on their
structure and the presence of the functional groups OH, NC₂, NH₂
and complex organic radicals, are reported. In order to carry out
these investigations, accelerated methods were developed for tes-
ting the protective properties of the compounds, for determining

Card 1/3

S/080/61/034/009.CM C.6

D204/D305

Investigating the influence of ...

the pressures of the saturated vapors of volatile inhibitors and the electrochemical behavior of metals under thin films of electrolytes in an atmosphere of volatile inhibitors. The investigation of the protective properties of volatile inhibitors was carried out by imitating corrosion under natural conditions whereby alternate condensation and drying of electrolytes on metal surfaces takes place. The study was carried out in an atmosphere of 100 % relative humidity with 5 cycles of condensation of moisture on the specimens per day. Organic nitrous bases and their salts with weak organic and inorganic acids, complex esters of acids, and inorganic ammonium salts were studied. The protective properties of the compounds were considered to be satisfactory, if no observable corrosion products had formed after 10 days of accelerated tests. It was found that the protective properties of amine salts are determined not only by the radical and the functional group, and thus by the composition of the compound, but also by their structure, on which their adsorptive ability evidently depends. Complex esters of acids and weak aromatic amines cannot be

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D204/D305

Investigating the influence of ...

used as volatile inhibitors, since the former retard corrosion of steel only slightly and the latter not at all. The protective properties of volatile inhibitors are independent of the hydrogen ion concentration established in the moisture film after the latter is saturated with inhibitor vapors. There are 1 figure, 7 tables and 7 references: 4 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: H.R. Backer, Ind. Eng. Ch., 46, 12, 2592, 1954; A. Wachter, T. Sky, M. St'ilmann, Corrosion, 7, 9, 284, 1951; W.D. Harki, D. Florence, J. Phys. Chem. 6, 847, 1938.

SUBMITTED: July 18, 1960

Card 3/3

ROZENFEL'D, I.L.; RUBINSHTEYN, F.I.; YAKUBOVICH, S.V.; PERSIANTSEVA, V.P.;
Prinimali uchastiye: GILLER, R.S.; KURSKAYA, A.G.

Studying chrome acid guanidine as a corrosion inhibitor for oil
paints. Lakolras.mat.i ikh prin. no.3:15-21 '62. (MIRA 15:7)
(Protective coatings)
(Guanidine)

ROZENFEL'D, I.L.; POLTEVA, M.N.; PERSIANTSEVA, V.P. (Moskva)

Physicochemical properties of dicyclohexylamine nitrite, a
volatile corrosion inhibitor. Zhur. fiz. khim. 35 no.7:1474-1477
(MIRA 14:7)
Jl '61.

1. AN SSSR, Institut fizicheskoy khimii.
(Dicyclohexylamine)

18.8310

27345
S/080/61/034/009,011,016
D204/D305

AUTHORS: Rozenfeld, I. L., Polteva, M. N., Persiatsⁿyeva, V. P.
and Terent'yev, P. B.

TITLE: Pressure of saturated volatile inhibitor vapors

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 9, 1961,
2056 - 2061

TEXT: This is report II of a series of papers on investigating the mechanism of protection of metals against corrosion by volatile inhibitors. One of the important characteristics of volatile inhibitors is their saturated vapor pressure. Compounds having high vapor pressure are most effective. For the successful application of such inhibitors, the temperature dependence of the pressure of the saturated vapor must also be known. The inclination of the straight line obtained by plotting negative logarithm of pressure of saturated vapors against $1/T$ enables the changes of pressure with temperature to be determined, and the temperature range in which an in-

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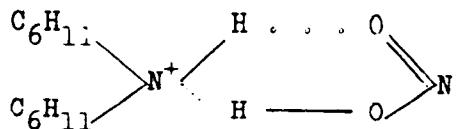
27345

S/080/61/034 '004/17.6

D204/D305

Pressure of saturated volatile ...

hibitor is effective to be defined. By means of the Knudsen method, the temperature dependence of the pressure of saturated vapors of the volatile inhibitors dicyclohexylamine nitrate and morpholine cinnamate was investigated. On the basis of this dependence, the value of the latent heat of sublimation for di-cyclohexylamine nitrate was calculated (25 Kcal/mol). From a comparison of the value of the latent heat of sublimation and the dipole moment, it is proposed that the structure of di-cyclohexylamine in the vapors is as follows:



There are 3 figures, 1 table and 10 references: 3 Soviet-bloc and 7 non-Soviet-bloc. The references to the 4 most recent English-language publications read as follows: E.G. Stroud, W.H.I. Vernon, J. Applied Chem., 2, 166, 1952; A. Wachter, T. Sky. N. Stillman,

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Pressure of saturated volatile ...

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S/080/61/034/009/011/016
D204/D305

Corrosion, 7, 9, 284, 1951; E.G. Stroud, W.H.I. Vernon, U.K. Pat.
691109, 1951; H. Patzelt, Corrosion, 9, 1, 19, 1953.

SUBMITTED: July 18, 1960

4

Card 3/3

S/081/62/000/023/053/120
B124/B101

AUTHORS: Rozenfel'd, I. L., Rubinshteyn, F. I., Yakubovich, S. V.,
Persiantseva, V. P.

TITLE: Study of guanidine chromate as a corrosion inhibitor in
oil paints

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1962, 411, abstract
23I334 (Lakokrasochn. materialy i ikh primeneniye, no. 3,
1962, 15-21)

TEXT: A new way to increase the protective qualities of pigmented coatings
by means of modifying inert fillers and film-forming materials with
corrosion inhibitors (CI) is suggested. The effect of organic CI on the
properties of the oil paints was examined. It has been shown that
guanidine chromate (GC) has strong passivating properties and that its
effect on the oil coating is to inhibit metal ionization by anodic reaction.
Conditions for obtaining corrosion-resisting oil paints are determined,
with GC used as the CI. [Abstracter's note: Complete translation.]

Card 1/1

ROZENFELD, I. I. [Rozenfel'd, I.L.]; PERSIANTEVA, V.P. [Persiantseva, V. P.];
TERENTIEV, P.B. [Terent'yev, P.B.]; POLTEVA, M.N.; KUZNETOVA, M.M.
[Kuznetsova, M.M.]

Studies on the influence of chemical composition, structure and
certain physicochemical properties of the organic compounds upon
their capacity of braking the corrosion process. Analele chimie
17 no.3:175-196 Jl-S '62.

ROZENFELD, I.L., PERSIANTSEVA, V.P., TERENTIYEV, P.B.

"Mechanism of metal protection from corrosion with the aid of
volatile inhibition."

Report submitted to the Second Intl. Congress on Corrosion of Metals
New York City 11-15 March 1963

INSTITUTE OF PHYSICAL CHEMISTRY, MOSCOW

PERSIANTSVA, V.P.; RAZVIFEL'D, I.L.

Laboratory methods of investigating volatile inhibitors. Trudy
Inst.fiz.khim. no.7:41-50 '59. (MIRA 13:5)
(Inhibition (Chemistry)--Testing)

S/137/62/000/004/143/201
A060/A101

AUTHORS: Persiantseva, V. P., Rozenfel'd, I. L., Novitskaya, M. A., Akimova, T. I., Labutin, A. L.

TITLE: The action mechanism of volatile inhibitors

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 4, 1962, 102 - 103, abstract 41625 ("Vestn. tekhn. i ekon. inform. N.-i. in-t tekhn.-ekon. issled. Gos. kom-ta Sov. Min. SSSR i khimii", 1961, no. 2, 68 - 76)

TEXT: An investigation was carried out upon the action mechanism of volatile inhibitors by studying the adsorption processes and the action of adsorption layers upon the process kinetics of electrochemical reactions. The protective properties of a large number of compounds were preliminarily studied by the methods of accelerated tests, extended tests and testing on paper. All the tests were carried out at 100% relative humidity and at a temperature of 30°C, and also in a warehouse location. The volatile inhibitor is adsorbed by the metallic surface in the form of molecules or ions, which form as result of hydrolysis in the water film of the electrolyte (complex organic cations, hydroxyl groups, or acid

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The action mechanism of volatile inhibitors

S/137/62/000/004/143/201
A060/A101

radicals). These absorbed groups in some cases slow down the rate of only the anodic reaction, and in others - of both the anodic and the cathodic one. The characteristics determining the effectiveness of volatile inhibitors are: vapor pressure, absorptive power, and the strength of the bond between the inhibitor or protective group and the metallic surface, and also the rate of inhibitor retardation of the electrochemical reactions causing the corrosion process. There are 11 references.

V. Tarisova

[Abstracter's note: Complete translation]

Card 2/2

ROZENFEL'D, I.L.; PERSIANTSEVA, V.P.; KUZNECHOVA, M.M.; POLTEVA, M.N.;
TERENT'YEV, P.B.

Electrochemical behavior of metals in the atmosphere of volatile
inhibitors. Zhur.prikl.khim. 34 no.10:2239-2244 O '61.
(MIRA 14:11)
(Metals) (Electrochemistry) (Inhibition (Chemistry))

5/4)

AUTHORS: Rozenfel'd, I. L., Persiantseva, V. P. SOV/20-122-2-26, 42

TITLE: The Influence of the Adsorption of Volatile Inhibitors on the Electrochemical Behavior of Iron (Vliyaniye adsorbsii letuchikh inhibitorov na elektrokhimicheskoye povejeniye zheleza)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 2, pp 260-263 (USSR)

ABSTRACT: This paper deals with the investigation of the electrochemical kinetics in thin electrolyte layers according to the method of I. L. Rozenfel'd (Ref 3). This method was improved in such a manner that it was possible to apply electrolyte films to the electrode surface after it had adsorbed the inhibitor from the gaseous phase without violating the hermeticity of the space. The volatile inhibitors investigated in this paper are benzylamine (C_7H_9N) and morpholine, which protect iron well from corrosion. A diagram shows the dependence of the potential of iron on the time of the previous soaking of the electrode in an atmosphere saturated by benzyl-

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The Influence of the Adsorption of Volatile Inhibitors on the Electrochemical Behavior of Iron

SOV/20-122-2-26/42

amine. The adsorption of the inhibitor moves the steady potential towards the positive side. If the time of the soaking of the electrode in the atmosphere saturated by the inhibitor vapors increases, the observed effect increases, too. After a certain time, this effect acquires a constant value. The surface, obviously, is then totally saturated with the inhibitor and the potential is displaced by more than 200 mV. If there is a thin layer of electrolyte on the surface of the metal, the adsorption of the same inhibitor from the gaseous phase causes by far less intense effects. In this case, the potential of the iron is displaced only by 50-60 mV. The adsorption of the inhibitor from the gaseous phase, therefore causes more noticeable variations of the potential and, possibly, also a higher passivation degree of the electrode. The adsorption connection of the inhibitor with the metal surface and the stability of the passive state may in a certain degree be characterized by data concerning the time dependence of the potential of the metal after the saturation of the electrolyte film attached to this surface. If the time of the previous soaking of the electrode in the atmosphere com-

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The Influence of the Adsorption of Volatile Inhibitors on the Electrochemical Behavior of Iron

SOV/2o-122-2-26 42

posed by the inhibitor vapors increases, the potential of the metal becomes more and more stable, and no activating influence of the electrolyte is observed. Also the adsorption of morpholine has a similar influence upon the electrochemical behavior of the iron electrode. According to the above-discussed experiments and considerations, the volatile inhibitors also are adsorbed by the metal surface, and they change their electrochemical properties. The greatest displacement of the steady potential is observed after a previous adsorption of an inhibitor by the electrode from the gaseous phase. In this case, the maximum saturation of the surface with the inhibitor and a marked stability of the passive state are observed. There are 4 figures and 4 references, 3 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR
(Institute of Physical Chemistry, AS USSR)
Card 3/4

PERSIANTSEVA, V. P., POLTEVA, M. V., TERENTYEV, P. B., ROZENFELD, I. L., Moskva:

"A Study On The Mechanism Of Metals Protection Against Corrosion By Volatile Inhibitors".

report submitted for the European Symposium on Corrosion Inhibitors, Ferrara Italy,
29 Sep-1 Oct 1960.

PERSHANTSEVA, V.P.; TITOV, P.S.

Electrolytic brass plating from pyrophosphate electrolytes. Nauch.
dokl. vys. shkoly; khim. i khim. tekhn. no.3:584-587 '58.
(MIRA 11:10)

1. Predstavlena kafedroy elektrokhimii i korrozii Moskovskogo instituta
tsvetnykh metallov i zolota imeni M.I. Kalinina.
(Brass) (Electreplating)

PERSIAN TSEVA, V.P.

PHASE I BOOK INFORMATION

201/4271

ANALYSTS AND SCIENTISTS. Institute of Chemistry, Professor E.I. Zelenina

Investigations on Corrosion. [1970.] 5: Metallurgy. Priority 418. New
Technological Efficiency (Investigations on Corrosion of Metals) Sov. Sci. 31: New
Methods and Instruments for Corrosion Testing. Moscow, Izd. Nauka SSSR, 1979.
176 p. (Russian) 120: Frey, W., et al. Printed 1,000 copies

PRINTED. B. D. Tsimanov, Doctor of Chemistry, Professor. Ed. of Publishing
B. D. Tsimanov, S. G. Reprov, Tech. Sci. D. A. Kozachenko and Yu. V. Lutsenko,
Editorial Board. B. D. Tsimanov, A. P. Strakhov, Candidates of Chemistry,
and P. V. Bochigine, Candidates of Chemistry.

PURPOSE: This collection of articles is intended for scientific workers at
research institutes and technical personnel of plant laboratories.
CORROSION. The articles included in this collection deal basically with methods of
corrosion investigation which have not yet been published in Soviet periodical
literature but are of definite interest for studying corrosion processes.
A wide range of problems is covered. In addition to the methods discussed
the articles provide some experimental data which can possibly facilitate utili-
zation of such standard methods. To popularize the methods, references
to foreign sources are given.

Clark, O.H., R.J. Mikkelsen, D.E. Miller, and E.D. Tsimanov. 11
Electrochemical Method for Investigating Atmospheric Corrosion of Metals. 11
Kudryavtsev, P.M., Reprov, Yu.A., Tsimanov, and T.V. Akhrem. 22
Methods of Electrochemical and Corrosion Investigations in Thin Layers
of Electrolytes

Dmitriev, V.P. and V.L. Romanova. Laboratory Methods for Investigat-
ing Volatile Substances. 41

Martynov, Yu.P., M.M. Suttorov, and E.D. Tsimanov. A Method for Ob-
taining Anodic Polarization Curves by Means of Cyclic Polarization. 51
Pashin, E.S., and M.M. Suttorov. Electrochemical Method for the Rapid
Evaluation of the Corrosion Resistance of Metals. 54

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Microhardness of Stainles Steel During its Corrosion. 60

Romanova, L.P., V.S. Rodchenko, and G.K. Mikkelsen. Methods for Under-
standing the Corrosion and Electrochemical Behavior of Metals Under
Oxidative Conditions. 68

Tsimanov, B.D., and E.D. Tsimanov. Use of the Resistance-Capacitance
Method for Investigating the Kinetics of Protective Films During the Cor-
rosion of Metals Under Stress. 70

Queso
Date 3/6

"APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001240120012-8

ROZENFEL'D, I.L., prof.; PERSIANTSEVA, V.P., kand.tekhn.nauk

Corrosion inhibitors. Khim. nauka i prom. 3 no.4:500-505 '58.
(Corrosion and anticorrosives) (MIRA 11:10)

APPROVED FOR RELEASE: 06/15/2000

CIA-RDP86-00513R001240120012-8"

AUTHORS: Persiantsev, V. r., Titov, r. S. C.V 156-5 -7-11-12

TITLE: The Electrolytic Production of Brass From Pyrophosphate Electrolytes (Elektroliticheskoye izluchivaniye iz pirofifatnykh elektrolitov)

PERIODICAL: Nauchnyye doklady vyschey shkoly, Khimiya i khimicheskaya tekhnologiya, 1955, Nr 3, pp. 544 - 547 (USSR)

ABSTRACT: The conditions for the production of brass by electrolysis from solutions containing copper pyrophosphate and zinc pyrophosphate were investigated. It was found that in the dissolution of copper pyrophosphate and zinc pyrophosphate in solutions of sodium pyrophosphate complex ions are formed which have the following composition: $[MeP_2O_7]^{2-}$ and $[Me(P_2O_7)_2]^{6-}$.

The dependence of the quality of the electrolytic brass surface on such factors as the concentration of copper and zinc solutions, on the current density, the temperature, the mixture of the electrolytes during electrolysis, as well as on the acidity of the solution was investigated. It was found that the following conditions are necessary for the production of a good brass surface: the concentration of zinc and copper in the electrolyte

Card 1/2

The Electrolytic Production of Brass From
Pyrophosphate Electrolytes

SOV. 156-2-1-1, 52

must not be lower than 0,5 - 0,45 mole/l; the concentration
of the free phosphate solution should be 0,15 - 0,20 M; the pH
value of the electrolysis solution should be 8 - 9,4; the
temperature of the solution should be 55 - 40° C, and the
current density should be 0,7 - 1 V(?). The chemical analysis,
and the microscopic and radiographic investigations of a brass
surface produced showed that this surface had micro-porous
structure. There are 2 figures, 3 tables, and 7 references,
which are Soviet.

ASSOCIATION:

Kafedra le trokhinii i korrozii Metallov i
instituta tsvetnykh metallov i zolota im.M.I.Kalinita (Chair
of Electr-chemistry and Corrosion at the Moscow Institute of
Nonferrous Metals and Gold imeni M.I.Kalinin)

SUBMITTED: January 11, 1958

Card 2/2

5.114C(B)
18.8300

69716

sov/81-59-9-31685

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 9, p 308 (USSR)

AUTHORS: Turkovskaya, A.V., Persiantseva, V.P.

TITLE: The Effect of Some Factors on the Rate of Atmospheric Corrosion of Magnesium and Its Alloys

PERIODICAL: Sb. nauchn. tr. Nauchno-tekh. o-vo tsvetn. metallurgii, Mosk. in-t tsvetn. met. i zolota, 1958, Nr 29, pp 172 - 178

ABSTRACT: The author studied the effect of moisture, CO₂, SO₂ and the presence of solid dust particles on the rate of atmospheric corrosion (RAC) of Mg and the Mg-alloy of the composition (in %): Al 6.5, Mn 0.3, Zn 1, which has been passivated in an acidic bichromatic bath containing NH₄Cl. The study has shown that RAC of these materials increases sharply at an increase in the relative humidity to 90 - 95%. An intensification of RAC of Mg was noted in an atmosphere polluted by CO₂ and SO₂, in which case the joint presence of both gases leads to higher corrosion losses than in an atmosphere containing these gases separately. Particles of coal dust promote the corrosion in SO₂ and almost do not affect the corrosion rate in an atmosphere polluted by CO₂. A. Shatalov

Card 1/1

3.862

3/81/62/000/003/042/90
B156/B101

18 8310

AUTHORS: Pereantseva, V.P., Rozenfel'd, I. L., Levitskaya,
M.A., Skimova, T.I., Labutin, A.L.

TITLE: Mechanism by which volatile inhibitors work

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1962, 327-328,
abstract 31211 (Vestn. tekhn. i ekon. inform. N.-i
in-t tekhn.-ekon. issled. Gos. kom-ta Sov. Min.
SSSR i khimii, no. 2, 1961, 68-76

TEXT: Research into the protective properties of a large number of compounds used as volatile corrosion inhibitors (VCI) has revealed a number of VCI which are effective at protecting steel and nonferrous metals from corrosion (a table is included). Study of the electrochemical behavior of steel in the presence of VCI has shown that a potential shift characteristic of adsorption of VCI by the metal surface takes place. The effects of four VCI are examined in detail; these are benzyl amine, morpholine, dicyclohexyl amine nitrite, and cyclohexyl amine carbonate. It has been found that VCI is adsorbed in the form of molecules or ions

Card 1/2

ROZENFEL'D, I.L.; PERSIANTSEVA, V.P.; TERENT'YEV, P.B.; POLTEVA, M.N.

Effect of the chemical composition and structure of organic
compounds on their capacity to inhibit corrosion processes.
Zhur.prikl.khim. 34 no.9:2047-2056 S '61. (MIRA 14:9)
(Corrosion and anticorrosives)

ROZENFEL'D, I.L.; POLTEVA, M.N.; PERSIANTSEVA, V.P.; TERENT'YEV, P.B.

Saturated vapor pressure of volatile inhibitors. Zhur.pril.khim.
34 no.9:2056-2061 S '61. (MIRA 14:9)
(Inhibition (Chemistry)) (Vapor pressure)

PERSIANTSEVA, V.P.; KUDRYAVTSEV, N.T.; KAL', V.M.

Bright copperizing of shaped hardware using acid electrolytes.
Metalloved. i obr. met. no.9:42-46 S '58. (MIRA 11:10)

1. Moskovskiy khimiko-tehnologicheskiy institut imeni Mendeleyeva.
(Protective coatings) (Electrolytes)

Persiantseva, V.P.

AUTHORS: Persiantseva, V.P., Shnayder, V.A.

32-11-9/60

TITLE: Colorimetric Determination of the 2.6-, 2.7-Naphthalene Disulphide Acid Content in a Nickel Electrolyte (Kolorimetricheskoye opredeleniye 2.6-, 2.7-naftalindisulfokisloty v nikolevom elektrolite)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 11, pp. 1298-1298 (USSR)

ABSTRACT: The acid mentioned is characterized by the fact that it causes the "phenomenon of mould" in the nickel electrolyte. For the purpose of determining it, it is recommended to carry out separation of nickel from the electrolyte chromatographically by the application of the cationite "SDV-3". For this purpose an adsorber was mounted in a cylindrical vessel (filter) of 15 mm diameter up to a height of 200 mm. The electrolyte was made to pass through the adsorber with a velocity of 100 ml per 20 min. After nickel adsorption was completed the filter was rinsed out while the same velocity was maintained for 10 minutes. The analysis itself was then carried out: 5 ml of the electrolyte was dissolved in distilled water of up to 20-25 ml total volume and sent through the adsorption filters. The filters were rinsed out with distilled water; the solution together with the rinsing water was introduced into a platinum vessel, where 10 ml

Card 1/2

Colorimetric Determination of the 2.6-, 2.7-Naphthalene Disulphide Acid Content
in a Nickel Electrolyte 32-11-9/60

of the 30% NaOH solution was added. The whole content was vaporized until the sediment became dry, which was then melted at $320 \pm 2^{\circ}$. To the cooled melt 35 ml of nitrating solution; 10 g nitrate of ammonium in 100 ml hydrochloric acid having the specific weight of 1.84-1.82 was added. After the strong reaction hereby caused had ended, distilled water up to a volume of 100 ml was added. The solution, which in this case was of yellow color, was colorimetrized by a blue light filter. According to the previously prepared gauge curve of determination, the naphtalene sulphide acid content (volume) was determined. The method described is distinguished by its high accuracy. There is 1 table.

ASSOCIATION: Chemical-Technological Institute imeni D.I.Mendeleyev (Khimiko-tehnologicheskiy institut im. D.I.Mendeleyeva)

AVAILABLE: Library of Congress

Card 2/2

VIDOVIC, Milan, dr.; PERSIC, Davor, Mr Ph.

Gastric carcinoma and serum alkaline phosphatase. Lijecn. vjesn.
84 no.8:773-779 '62.

1. Iz Kirurske klinike Medicinskog fakulteta u Zagrebu.
(BLOOD ALKALINE PHOSPHATASE) (STOMACH NEOPLASMS)
(ENZYME TESTS)

YUGOSLAVIA

Dr Milan VIDOVIC and Mr Bojan PEASLY, Surgical Clinic, Zagreb,
Faculty (Kirurška klinika Medicinskega fakulteta) Univerzitet u Zagrebu

"Gastric Carcinoma and Serum Alkaline Phosphatase."

Magazin, Lijecnicki Vjesnik, Vol 54, No 8, Aug 1962, pp 105-111.

Abstract [English summary modified]: Study of 142 patients with gastric cancer, correlating hepatic metastases with increased alkaline phosphatase levels. Authors suggest that Shinoura et al. proposed upper limit of norm too high, should be 6. Provided all other possible causes of an increase in alkaline phosphatase level are excluded, detection of it is a strong indication of presence of hepatic metastases. There are occasional false negatives, and false positives cannot be ruled out. Diagram, 3 tables, 31 Western and 3 Yugoslav references.

1/1

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APPROVED FOR RELEASE 06/15/2000 CIA-RDP86-00513R001240120012-8"
BOGAN, N.; PERSIC, N.; RADOSEVIC, Z.

On the attitude toward psychiatric patients. Neuropsihijatrija 9
no.4:273-285 '61.

1. Iz Neurološko-psihijatrijske klinike Medicinskog fakulteta u Zagrebu
(Predstojnik: Prof. dr R. Lopasic)

(MENTAL DISORDERS)

PERASIC, N.; VIJEK, Z.; PALMOVIC, R.; ARKO, K.; BETRIANI, M.

On some modifications of electric shock therapy. Neuropsihijatrija
9 no.2/3:166-177 '61.

1. Iz Neurološko-psihijatrijske klinike (Predstojnik: Prof. dr
R. Lopasic) i Kirurske klinike Medicinskog fakulteta u Zagrebu
(Predstojnik: Prof. dr D. Juzbasic).
(SHOCK THERAPY ELECTRIC)

PERSIC, Nikola, dr.

Psychiatry in the Soviet Union. Lijecn. vjesn. 85 no. 7:747-758
'63.

1. Iz Neurološko-psihijatrijske klinike Medicinskog fakulteta
u Zagrebu.

(PSYCHIATRY)

S

PERSIC, Nikola, dr.; KOPORCIC, Petar, dr.

Polyclinical and dispensary psychiatric services in Croatia.
Lijecn. vjesn. 83 no.5:445-458 '61.

1. Iz Neurološko-psihijatrijske klinike Med. fakulteta Sveučilišta
u Zagrebu u Zagrebu i Zavoda za socijalno osiguranje NR Hrvatske u
Zagrebu.

(PSYCHIATRY)

PERSIC, Nikola

On the possibility of the use of electric stimulation in insulin hypoglycemia. Rad Jugosl. akad. znan. umj.[Med]323:65-149 '61.

(SHOCK THERAPY INSULIN) (ELECTROTHERAPY)

ASPERGER, Zdravko, dr.; PERSIC, Tomislav, dr.

Accidental hypothermia. Lijecn. vjesn. 85 no.4:423-430 '63.

l. Iz Interne poliklinike Medicinskog fakulteta u Zagrebu.
(HYPOTHERMIA)

PERSIC, Zvonko, d-r

A contribution to the treatment of complicated crural fractures.
Voj.san.pregl., Beogr. 17 no.9:927-930 S '60.

1. Vojnomedicinska Akademija u Beogradu, Hirurska klinika
(LEG fract & disloc)

PAPO, Isidor, generalmajor sanitetske sluzbe profesor dr; PERSIC, Zvonko, dr

Pectus excavatum. Voj.san.pregl., Beogr. 17 no.10:1040-1045 0 '60.

1. Vojnomedicinska Akademija u Beogradu, Klinika za hirurske bolesti
(THORAX abnorm)

PERSIC, Zvonko, dr.

Severe injury of the leg. Voj.san.pregl., Beogr. 18 no.l:72-74 Ja '61.

1. Vojnomedicinska Akademija u Beogradu, Hirurska klinika.
(LEG wds & inj)

PIRSIC, Zvonko, dr.

Stercoral fistula in postoperative scar after appendectomy as a complication of sigmoid diverticulitis. Vojnomanit. pregl. 18 no.9: 802-804 S '61.

1. Vojnomedicinska akademija u Beogradu, Klinika za hirurske bolesti.

(APPENDECTOMY compl) (DIVERTICULITIS compl)
(INTESTINAL FISTULA etiol)

PERSIDSKAYA, L.

Derivation of a bounded solution to a certain functional
equation. Vest. AN Kazakh. SSR 20 no.1:77-80 Ja '64.
(MIRA 17:3)

PERSI DSKIY, K.P., akademik

Abstract holomorphic functions. Vest. AN Kazakh. SSR 14 no.1:
91-97 Ja '58. (MIRA 11:2)

1. AN KazSSR.
(Functions)

PERSIDSKIY, A. S. (Engineer)

"Argon arc welding of flanged pieces of silicons made from thin-flange steel 1Kh13N9T e = 0.2-0.25-0-3 mm with use of linings and heating and with subsequent rolling of seams by steel rollers".

Report presented at the regular conference of the Moscow city administration NPO Mashprom, April 1963.

(Reported in Avtomaticheskaya Svarka, No. , August 1963, pp 13-25, M. M. Popovkin)

JPRS24,651 17 May 64

PERSIDSKIY, K.P., akademik.

Roots of transcendental equations. Vest. AN Kazakh. SSR 13 no.6:
79-85 Ja '57. (MLRA 10r9)

1. AN KazSSR.
(Functions, Transcendental)

PERS IDSKIY, K.P., akademik.

Geometrization of sets. Vest.AN Kazakh.SSR 13 no.9:91-93 S '57.
(MIRA 10:10)

1. AN KazSSR.

(Aggregates)

PERSIDSKIY, K.P., akademik.

Note on the geometry of linear normed spaces. Vest. AN Kazakh. SSR
13 no.4:91-95 Ap '57. (MLRA 10:6)

l.-Akademiya nauk Kazakhskoy SSR.
(Geometry, Differential)

PARTSOVSKIY, Lazar' Moiseyevich; PRUSAKOV, Mendel' Borisovich; VISLOUKH,
L.A., inzhener, redaktor; KHITROV, P.A., tekhnicheskiy redaktor

[Manual for traction substation attendants] Posobie deshurnomu
tiagovoi podstantsii. Moskva, Gos.transp.zhel-dor. izd-vo, 1956.
175 p. (MLRA 10:1)

(Electric railroads--Substations)

PERSIIDSkiy, V.Ya., kand.med.nauk

Relation of cocoa butter content on the nature of the effect of drinking cocoa on gastric secretion and evacuation [with summary in English]. Terap.arkh. 31 no.3:42-48 Mr '59.

(MIRA 12:4)

1. Iz gospital'noy terapeuticheskoy kliniki (zav. - deystvitel'nyy chlen AMN SSSR prof. V.N. Ivanov) Kiyevskogo meditsinskogo instituta.

(COCOA, effects,

on stomach secretion & evacuation, eff. of cocoa butter content (Rus))

(GASTRIC JUICE,

secretion, eff. of cocoa drinking, relation of cocoa butter content (Rus))

(STOMACH, physiol.

motor funct., eff. of cocoa drinking, relation to cocoa butter content (Rus))

PERUMOVA, N.D., doktor meditsinskikh nauk

Discussion of Professor S.A.Reinberg's article "Criticism of certain
basic aspects in radiobiology." Vest.rent. i rad. 31 no.4:51-54
Jl-Ag '56. (MLRA 9:10)

(RADIOTHERAPY
basic radiobiol. aspects)

PYRUNOV, K.I.; KOVALENKO, V.A.; YEFANOV, I.I., retsentent; PARTSEVSKIY, V.N.,
redaktor; BERLOV, A.P., tekhnicheskiy redaktor

[Over-all organization of work in drifting crews; the experience of
the Tashtagol mine] Kompleksnaya organizatsiya truda v gornoprokhod-
cheskikh brigadakh; iz opyta Kashtagol'skogo rudnika. Moskva, Gos.
nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii,
1956. 25 p. (MLRA 10:1)

1. Glavnyy inzhener Glavnogo upravleniya gosudarstvennoy metallurgi-
cheskoy promyshlennosti TSentral'nogo i Vostoknogo Ministerstva chernoi
metallurgii (for Yefanov)
(Mining engineering)

PERSIANOVA, I.V.

PERSIANOVA, I.V.: "Investigation of the adiabatic compressibility of binary fluid mixtures". Moscow, 1955. Vin Higher Education USSR. Moscow Order of Lenin Chemicotechnological Inst imeni D.I. Mendeleyev. (Dissertation for the Degree of Candidate of Chemical Sciences).

SO: Knizhnaya letopis' No 45, 5 November 1955. Moscow.

PERSIANINOV, L.S.

Intra-arterial blood transfusion in obstetric and gynecological practice.
Akush. gin., Moskva no.4:47-52 July-Aug 1952. (CLNL 23:2)

1. Professor. 2. Of the Obstetric-Gynecological Clinic (Director --
Prof. L. S. Persianinov), Minsk Medical Institute.

IN SIGHT OF U.S.

Intraarterial doses transduced by arterial
pressure monitoring. This is done by adding
1.0% lidocaine, 0.5% xylocaine, and 1% tetracaine
to a 500 ml bag of D5W.

PERSIANINOV, L.S.

[A.V.Vishnevskii's method of local anesthesia in obstetrical
and gynecological operations] Mestnaia anestezia po A.B.
Vishnevskomu pri akusherskikh i ginekologicheskikh operatsiiakh.
Moskva, Medgiz, 1955. 97 p.
(Local anesthesia)

PERSIANINOV, L.S., professor

Intra-arterial blood transfusion in acute blood loss in labor.
Akush.i gin. no.2:94-102 Mr-Ap '55. (MLRA 8:7)

1. Iz kafeiry akusherstva i ginekologii (zav. -prof. L.S.Persianinov) Minskogo meditsinskogo instituta.

(BLOOD TRANSFUSION, in various diseases,
hemorrh. in labor, intra-arterial)

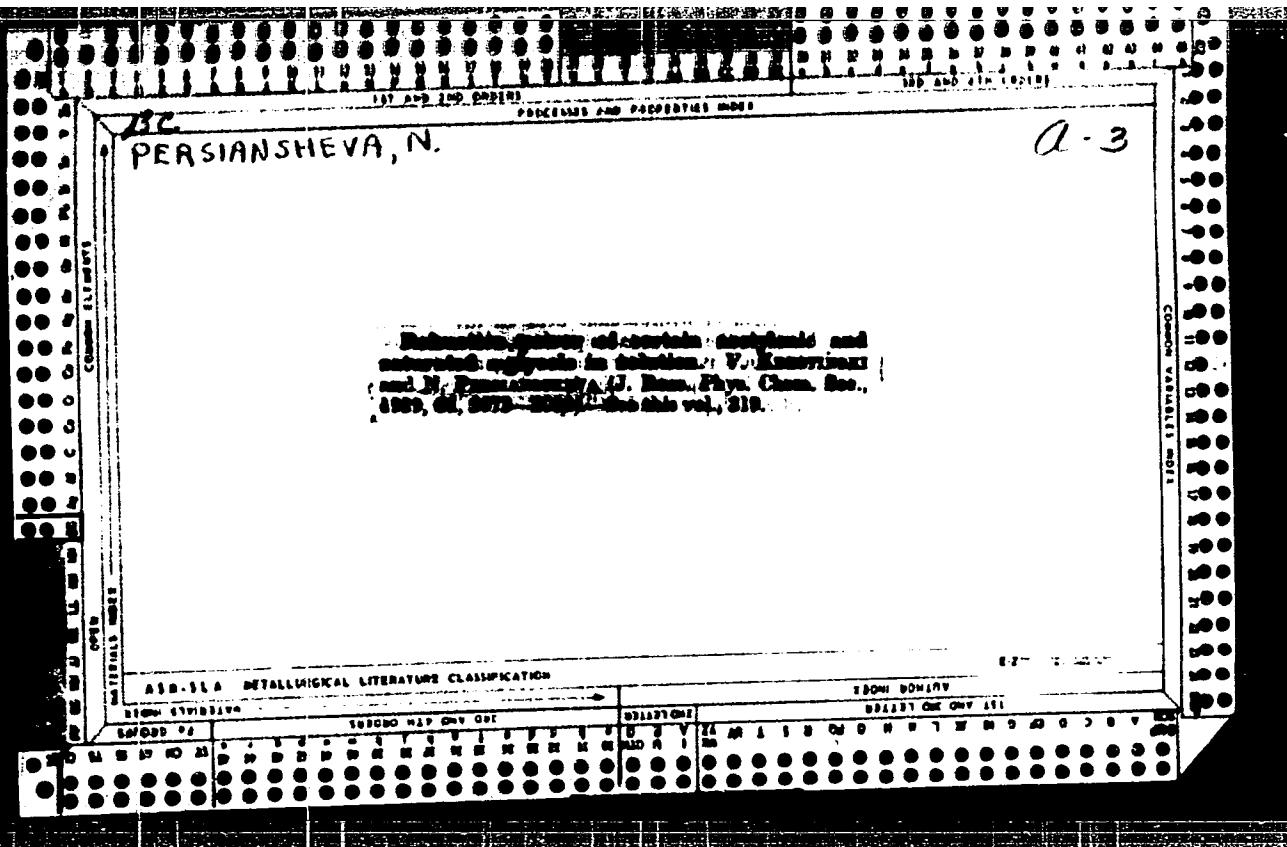
(LABOR, complications,
hemorrh., intra-arterial blood transfusion)

(UTERUS, hemorrhage,
in labor, intra-arterial blood transfusion)

(HEMORRHAGE,
uterus, intra-arterial blood transfusion)

PERSIANOV, R.A. (Leningrad); SHCHUKIN, B.K. (Leningrad)

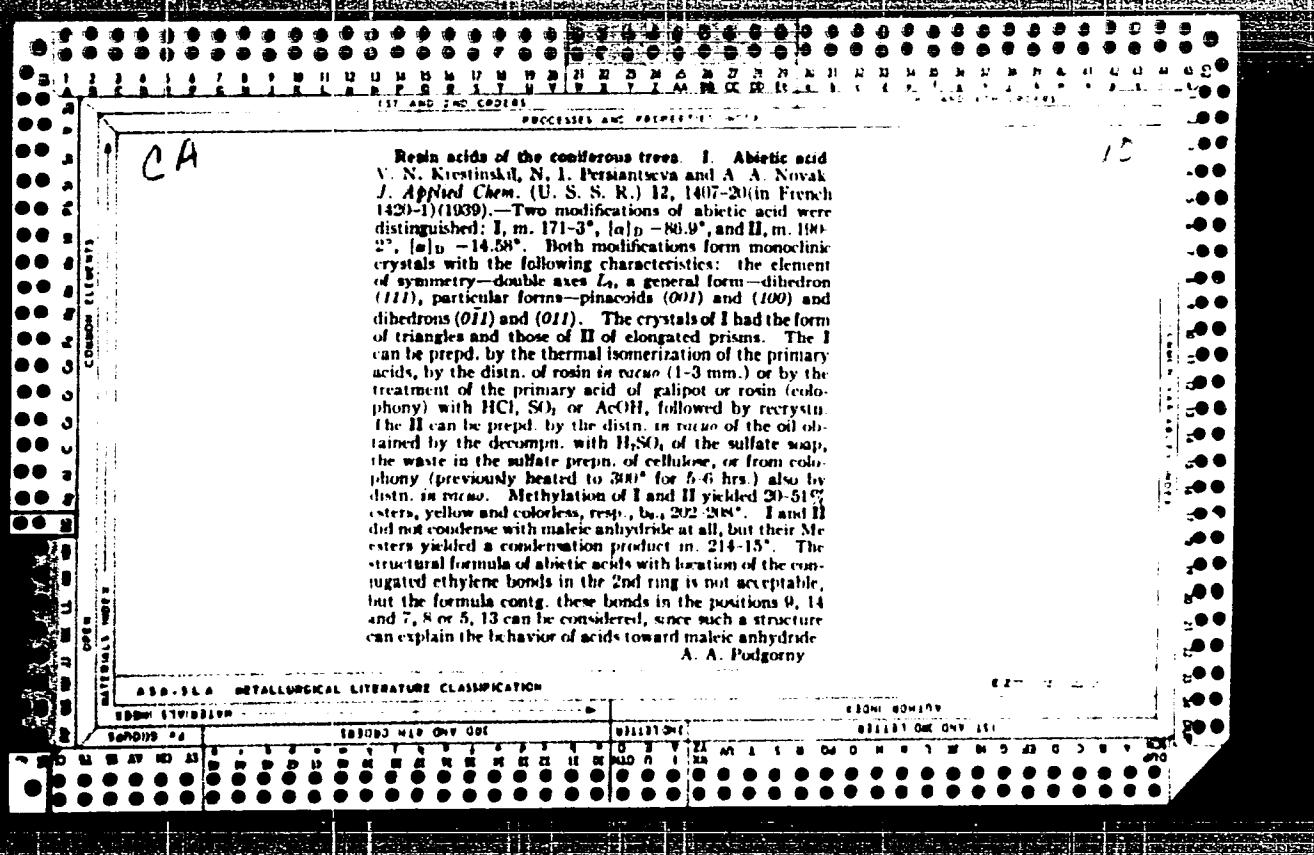
Increasing the rapid action of impulse-selector devices. Izv. AN SSSR
Otd. tekh. nauk no. 7:17-24 Jl '56.
(Telemetering) (MLRA 9:9)



PERSIANTSEVA, N.

Tishchenko, D., Persiantseva, N., Poliakov, V.- "New type of terpene transformations. Part 1". Synthesis of nitriles of the hemiterpene series." (n. 1929)

SO: Journal of General Chemistry, (Zhurnal Osnovnoi Khimii), 1952, Vol. 2, No. 1



PERSIANTSEVA, V.P.; ROZENFEL'D, I.L.

Laboratory method for studying volatile inhibitors. Zav. lab.
24 no. 7:832-836 '58. (MIRA 11:7)
(Corrosion and anticorrosives)

SOV/129-58-9-10/16

AUTHORS: Persiantseva, V. P., Kudryavtsev, N. T. and Kalt, V.M.

TITLE: Bright Copper Profiled Components Produced from Acidic Electrolytes (Blestyashcheye medneniye profilirovannykh izdeliy iz kislykh elektrolitov)

PERIODICAL: Metallovedeniye i Obrabotka Metallov, 1958, Nr 9,
pp 42-46 (USSR)

ABSTRACT: Various authors have pointed out the possibility of producing a bright copper plating from cyanide and acidic solutions (Ref 1). Much attention to this problem is paid in an earlier paper of the team of the authors of this paper (Ref 2) in which it was shown that the most intensive component of an acidic electrolyte bringing about brightness is thiourea. However, if a certain amount of thiourea is present, the precipitates will be very brittle and unserviceable for layer thicknesses exceeding 5 μ (Ref 3). V.G. Solokhina, N. T. Kudryavtsev and Lapatukhin, V.S. (Ref 2) proposed an electrolyte containing 250 g/litre CuSO₄; 5 H₂O; 50 g/litre H₂SO₄; 0.005 g/litre thiourea and 0.5 g/litre sodium salt, 2.6 (and 2.7) naphthalene diacid which reduces the brittleness of the copper

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Bright Copper Profiled Components Produced from Acidic Electrolytes

SOV/129-58-9-10/16

Card 2/5

deposits resulting from the introduction of thiocure. This electrolyte was tested in the printing industry for copper cylinders intended for deep engraving. A current density of up to 10 A/dm^2 is permissible for depositing copper onto a rotating cylinder; during the process the electrolyte was agitated by means of compressed air. The temperature of the electrolyte should be 15 to 22°C and the produced coatings have a hardness up to 250 kg/mm^2 . As a result of investigations, the authors developed a regime of depositing the coatings on profiled components and a technique of purifying the electrolyte from the accumulating decomposition products. The data obtained in laboratory investigations were verified under shop conditions. The laboratory investigations were carried out in electrolytic baths of 1 and 6 litre capacity incorporating a rotating cathode. Low carbon steels with a total surface area of 0.2 dm^2 were coated and as anodes sheets of electrolytic copper were used. Depending on the current density, the duration of the

Bright Copper Profiled Components Produced from Acidic
Electrolytes SOV/129-58-9-10/16

Card 3/5

coating was varied in such a way as to obtain coatings of a thickness of about 20μ . The pilot plant tests were carried out in a bath of 200 litre capacity, maintaining a bath temperature of 12 to 20°C. The concentrations of the sulphuric acid, the sodium salt and the thiourea were respectively 90, 0.5 and 0.005 g/litre; the current density was $3-10 \text{ A/dm}^2$, the temperature 12 to 20°C. As the brightness of the copper deposits decreased, thiourea was added. Naphthalene sulfonic acid was introduced at the rate of 0.04 to 0.06 g per Ah. The data given in the Table, p 43, show that, up to a certain current density, the copper deposits are bright for the electrolytes used in the experiments ($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ contents of 146, 200 and 250 g/litre). With increasing concentration of the copper sulphate, the permissible current density for which bright deposits are obtained will increase somewhat. However, in a solution with an increased concentration of copper sulphate, a rapid saturation of the near anode layer takes place.

SOV/129-58-9-10/16

Bright Copper Profiled Components Produced from Acidic Electrolytes

involving separation of copper sulphate crystals. Therefore, an electrolyte with an average copper sulphate concentration of 200 g/litre was used for which the optimum current density is 326 A/dm². Works experiments are also described. The 15 to 20μ thick copper layer is produced in 20 to 25 mins. If the specified technological regime is adhered to, the brightness of the copper coating produced from acidic copper electrolytes containing additions of brightening reagents will be at least as high as for mechanically polished coatings. The brightness of nickel deposited on such a copper layer will be higher than that of nickel deposited on a chemically polished or mechanically polished copper layer. At present in the Krasnyy Oktyabr' Works copper coating is effected only in accordance with this regime and this enabled improving the productivity and reducing the number of copper

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S.V/129-58-9-10/16

Bright Copper Profiled Components Produced from Acidic
Electrolytes

plating baths from 16 to 4.

There are 2 figures, 1 table and 3 references, 2 of
which are Soviet, 1 English.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut
imeni Mendeleyeva (Moscow Chemical-Technological
Institute imeni Mendeleyev)

1. Copper plating--Test results 2. Electrolytes--Properties

Card 5/5

PLAS'NIKHA, N. P.

PLAS'NIKHA, N. P. -- "I participated in the processing of the document. I did not copy anything else. I am P. S. Plas'nikha, Director of the Bureau of Economic Affairs. I am not involved in the technical service."
M. S. Plas'nikha, Director of the Bureau of Economic Affairs

M: Zemtseva, O. V., Secretary of the Bureau

S/076/61/035/OC7/CC6/019
B127/B102

AUTHORS: Rozenfel'd, I. L., Polteva, M. N., and Persiantseva, V. P.

TITLE: Physicochemical properties of the volatile corrosion inhibitor dicyclohexylamine nitrite

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 7, 1961, 1474-1477

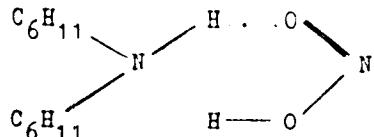
TEXT: The authors studied the physicochemical properties of the widely used dicyclohexylamine nitrite with the empirical formula ($C_{12}H_{24}N_2O_2$) and the lattice constants $a = 8.16 \pm 0.04\text{\AA}$, $b = 8.56 \pm 0.04\text{\AA}$, $c = 13.82 \pm 0.04\text{\AA}$; $P2_12_12_1$, $z = 4$. In order to determine the vapor pressure of the compound, the effusion method by Knudsen was applied. Table II presents the vapor pressures obtained for different degrees of purity. The heat of sublimation was calculated from the Clausius-Clapeyron equation: $\sigma = 4.575$ A = 25.3 kcal/mole. For further clarification, the dipole moment of this compound in dilute benzene solution was measured to be $\sim 4D$. It is assumed therefrom that not the salt form exists in dilute solution but a molecular compound of

Card 1/4

Physicochemical properties ...

S/076/61/035/007/006/013
B127/B102

the following structure:



The solid phase possibly consists of ions forming molecular complexes on evaporation. The high value of the heat of sublimation (~ 25 kcal/mole) suggests that a break of the crystal lattice destroys the weak Van der Waals forces and is also accompanied by a displacement of groups. Discrepancies between the values obtained and values from earlier papers are due to more accurate investigation methods at low temperatures: 35.2-65.8°C and to the high purity of the dicyclohexylamine nitrate (10 crystallizations from alcohol). Ya. K. Syrkin, M. Ye. Dyatkina and Ye. A. Shott-L'vova assisted in the measurements. There are 1 figure, 2 tables, and 9 references: 5 Soviet and 4 non-Soviet. The two references to English-language publications read as follows: Ref. 3: A. Wachter, Mod. Packaging, 22, 147, 1948; Ref. 8: A. Wachter, et. al.: Corrosion, 1, 284, 1951.

Card 2/4

Physicochemical' properties ...

S/076/61/035/007/006/019
B127/B102

ASSOCIATION: Akademiya nauk SSSR Institut fizicheskoy khimii (Academy of Sciences, USSR Physicochemical Institute)

SUBMITTED: October 12, 1959

Table 2: Vapor pressure of crystalline dicyclohexylamine nitrite in 10^4 mm Hg.

Legend: 1) After 3 recrystallizations; 2) after 7 recrystallizations; 3) after 8 recrystallizations; 4) after 10 recrystallizations.

Card 3/4

PERSIC, DAVORIN

✓ Determination of alkaline phosphatase in serum. Mari-
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Abstract: [Author's English summary modified] The author deals with the history of psychiatry in the USSR (with particular reference to RAVLOV), the status and organizational principles of Soviet psychiatric services (open psychiatric departments at psychiatric colonies for purposes of rehabilitation, organizational sections at psychiatric hospitals, psychiatric sections in general hospitals, psychiatric sections in psychiatric hospitals to treat mental disturbances in children, psychiatric dispensaries in the more sparsely inhabited areas, evening and day psychiatric hospitals, numerous psychiatric institutes), and medical studies and the system of specialized training (five to six months in a large psychiatric hospital on the basis of a specific program, three years of work in such a hospital, and five months of institutional specialization).

Seven statistical tables on institutions, staff, and patients. Six Soviet references.

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